

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
SOUTHERN DIVISION
No. 7:23-CV-897**

IN RE:)	
)	
CAMP LEJEUNE WATER LITIGATION)	UNITED STATES' REPLY
)	TO PLG'S MEMORANDUM IN
This Document Relates To:)	OPPOSITION TO D.E. 356
ALL CASES)	

INTRODUCTION

The United States filed a Motion to Exclude the Opinion Testimony of Mr. R. Jeffrey Davis and Dr. Norman L. Jones, [D.E. 356](#), on the simple basis they offered opinions on a body of work with which they were largely unfamiliar. *See* United States' Supp. Mem., [D.E. 357](#). In response, Plaintiffs' Leadership Group ("PLG") makes misplaced arguments and asks this Court to ignore the substantial oversights committed by their experts in rendering opinions related to the issues of water contamination at Camp Lejeune.

The United States seeks to exclude those opinions of Mr. Davis and Dr. Jones that are based on documents that they admitted they never read, specifically, their opinions on the soundness of the methodology employed by the Agency for Toxic Substances and Disease Registry ("ATSDR") in developing groundwater models at Tarawa Terrace. The United States also seeks to exclude as unreliable Mr. Davis and Dr. Jones's opinion that ATSDR's model accurately simulates contaminant concentrations at the water treatment plant. Putting aside that these opinions were not included in their expert reports and only introduced at Mr. Davis and Dr. Jones's depositions, these opinions are not reliable because the post-audit simply confirms that ATSDR's Tarawa Terrace model overpredicts contaminant concentrations at the water treatment plant.

ARGUMENT

I. PLG Fails to Show a Sufficient Basis for the Opinions of Mr. Davis and Dr. Jones on the ATSDR's Methodology.

A. The Record Clearly Shows Mr. Davis and Dr. Jones Based their Opinions on ATSDR's Methodology on a Limited Reading of ATSDR's Reports.

PLG's experts, Mr. Davis and Dr. Jones, testified that they based their opinion that the ATSDR's methodology was scientifically sound on a limited reading of the reports that ATSDR published on those models, specifically only three of the nine chapters published for ATSDR's water model for Tarawa Terrace. For example, Mr. Davis testified that his opinion on ATSDR's methodology was based on a "read[ing] of the process" that ATSDR went through:

Q: . . . [D]o you hold the opinion that ATSDR's methodology was scientifically sound?

A: Yes.

Q: And do you hold the opinion that ATSDR's methodology is accepted within the scientific community?

A: Yes.

Q: Did you evaluate the methodology used by ATSDR?

MS. BAUGHMAN: Objection. Form.

THE WITNESS: Evaluated to the extent that we read the process that they went through.

BY MS. SILVERSTEIN: And when you say "read the process that they went through," did you make determinations about whether their assumptions for various parameters were reliable?

MS. BAUGHMAN: Objection. Form.

THE WITNESS: We assumed that the numbers that they reported in the document were reliable.

Davis Dep. Tr., [D.E. 357-3](#), at 267:9–268:10. Dr. Jones similarly testified that his evaluation of portions of ATSDR's methodology, such as their probabilistic analysis, was limited to reading a summary about the analysis in question:

Q. . . . Dr. Jones, did you review the model parameters that ATSDR subjected to probabilistic analysis?

A: Yes, I read a summary of their probabilistic analysis. I'm not sure I remember all the details, but I did review that.

Q. . . . [B]eyond reading the summary, did you otherwise evaluate the model parameters ATSDR subjected to probabilistic analysis?

MS. BAUGHMAN: Object to the form.
THE WITNESS: No.

Jones Dep. Tr., [D.E. 357-6](#), at 164:8–23. As Mr. Davis and Dr. Jones’s deposition testimony makes clear, their opinions on the methodology employed by ATSDR are based on their reading of “the process that [ATSDR] went through.” Davis Dep. Tr., [D.E. 357-3](#), at 267:9–25.

PLG now argues that Mr. Davis and Dr. Jones’s opinions were not based on their limited reading of the ATSDR reports, but rather, on their post-audit, which PLG now claims was the basis for *all* of Mr. Davis and Dr. Jones’s opinions.¹ Pls.’ Opp’n, [D.E. 395](#), at 12. But the record shows that Mr. Davis and Dr. Jones’s opinions on the soundness of ATSDR’s methodology were not based on their post-audit, but rather their reading of a small subset of the ATSDR reports.

B. Mr. Davis and Dr. Jones’s Failure to Read a Majority of the ATSDR’s Water Modeling Reports Makes Their Opinion on the Model’s Methodology Unreliable.

PLG argues that the United States has failed to identify a “supportive industry practice” that indicates that Mr. Davis and Dr. Jones should have read ATSDR’s reports before opining that ATSDR’s methods were reliable. Pls.’ Opp’n, [D.E. 395](#), at 15. However, it is PLG’s burden to produce evidence that reading only a limited portion of ATSDR’s reports was a reliable methodology. *See Maryland Cas. Co. v. Therm-O-Disc, Inc.*, 137 F.3d 780, 783 (4th Cir. 1998) (holding that the proponent of testimony “must come forward with evidence from which the court can determine that the proffered testimony is properly admissible”). PLG has not done so.

¹ If, as PLG claims, Mr. Davis and Dr. Jones based their opinions on the ATSDR model’s methodology on the post-audit, such an opinion is unsupported. In attempting to distinguish *Sommerville v. Union Carbide Corp.*, No. 2:19-CV-00878, 2024 WL 1204094 (S.D.W. Va. Mar. 20, 2024), PLG argues that Mr. Davis and Dr. Jones’s failure to assess the appropriateness of the model inputs is acceptable because they were evaluating an existing model, rather than building their own. *See* Pls.’ Opp’n, [D.E. 395](#), at 14–15. This distinction does not exempt Mr. Davis and Dr. Jones from considering the appropriateness of the inputs to the ATSDR’s model. Rather, the fact that Mr. Davis and Dr. Jones did not select the model inputs themselves only emphasizes the necessity of evaluating the appropriateness of the parameters, rather than accepting them at face value. Therefore, PLG’s argument that Mr. Davis and Dr. Jones used a post-audit to evaluate the soundness of ATSDR’s methodology in generating its water models does not pass muster, and those opinions should be excluded.

Furthermore, contrary to PLG’s assertion that the United States has not identified “a single let alone critical ‘fact or data’ in these other ATSDR chapters [the United States] believes was not covered in the chapters Dr. Jones and Mr. Davis reviewed,” the United States has demonstrated that Mr. Davis and Dr. Jones ignored entire chapters dedicated to the exact topics on which they offered opinions. Pls.’ Opp’n, [D.E. 395](#), at 8; United States’ Supp. Mem., [D.E. 357](#), at 9. For example, Dr. Jones opined that ATSDR’s Monte Carlo analysis “did a reasonable job of simulating uncertainty.” Jones Dep. Tr., [D.E. 357-6](#), at 175:1–6. But ATSDR’s Monte Carlo analysis is described in detail in Chapter I of ATSDR’s Tarawa Terrace water modeling report, which Dr. Jones admitted he only skimmed. *See* ATSDR Chapter I Rep’t, [D.E. 377-5](#), at I30–59; Jones Dep. Tr., [D.E. 357-6](#), 87:7–17. Chapter I addresses, *inter alia*, how ATSDR generated uncertain model input parameters for infiltration, the distribution coefficient, bulk density, effective porosity, reaction rate, mass-loading, and longitudinal dispersivity—none of which is summarized in Chapter A. *See generally* ATSDR Chapter A Rep’t, [D.E. 357-2](#), ATSDR Chapter I Rep’t, [D.E. 377-5](#), at I35–42. The process described in Chapter I was a critical component of ATSDR’s Monte Carlo uncertainty analysis, yet despite having failed to read the chapter detailing that analysis Dr. Jones opined that the Monte Carlo analysis reasonably simulated uncertainty. *Id.*; *see also* Jones Dep. Tr., [D.E. 357-6](#), at 175:1–6.

Moreover, any claim that the summary chapters read by Mr. Davis and Dr. Jones are sufficient is undermined by PLG’s other arguments. For example, PLG’s motion to exclude certain opinions of the United States’ water modeling expert, Dr. Spiliotopoulos, repeatedly cites Chapter I, rather than one of the summary chapters read by PLG’s experts, to explain the Monte Carlo analysis to the Court. Pls.’ Supp. Mem., [D.E. 377](#), at 5–6. Remarkably, PLG even argues that the National Research Council’s (“NRC”) review of the ATSDR model was “incomplete”

because it did not consider Chapter I, while justifying Mr. Davis and Dr. Jones' failure to review six of nine chapters in offering opinions about the soundness of ATSDR's methodology for the Tarawa Terrace model. Pls.' Opp'n, [D.E. 395](#), at 17 n.19. Accordingly, the Court should exclude Mr. Davis's and Dr. Jones's opinions about ATSDR's water modeling methods because PLG has not shown that these opinions meet Rule 702's reliability threshold. *See* Fed. R. Evid. 702.

C. Mr. Davis and Dr. Jones's Failure to Review Contrary Scientific Literature Renders Their Opinions Unreliable.

PLG's attempts to mitigate the impact of their experts' failure to review published literature on the precise subject of their opinions is unavailing. First, PLG's argument ignores that at their depositions, Mr. Davis and Dr. Jones went beyond offering opinions based on a post-audit they performed and offered opinions on the methodologies employed in ATSDR's Tarawa Terrace model and the accuracy of that model's simulated contaminant concentrations. *See* Pls.' Opp'n, [D.E. 395](#), at 17; Jones Dep. Tr., [D.E. 357-6](#), at 231:18–232:13; *see also* Davis and Jones Initial Report, [D.E. 357-4](#), at 6-1. The Navy letter and NRC Report—which Mr. Davis and Dr. Jones failed to review—both focus on the methodologies underlying the Tarawa Terrace model and are plainly part of the “facts or data in the case.” Fed. R. Evid. 703. Nevertheless, PLG argues that these materials are not the kind of “facts and data an engineer would rely on to extend a model and prepare a quantitative and qualitative assessment of its performance.” Pls.' Opp'n, [D.E. 395](#), at 17. But this argument ignores that Mr. Davis and Dr. Jones go beyond the results of the post-audit to offer opinions on the accuracy and methodology of the Tarawa Terrace model.

In attempting to analogize *SAS Institute, Inc. v. World Programming Ltd.*, 125 F. Supp. 3d 579, 590 (E.D.N.C. 2015), *aff'd*, 874 F.3d 370 (4th Cir. 2017), to the facts of this dispute, PLG asks this Court to “not substitute its judgment for that of the expert as to what is sufficient evidence to inform conclusions *based on experience*.” Pls.' Opp'n, [D.E. 395](#), at 18 (emphasis

added). Here, the United States seeks to exclude opinions based on the experts' failure to read certain reports by the scientists who created the model which describe critical features of the model or consider historic opinions of other scientists directly commenting on the model. As *SAS Institute* held, the Court must "review holistically the data relied upon by the expert and determine whether it is so incomplete as to render his methodology unreliable." *SAS Inst., Inc.*, 125 F. Supp. 3d at 590. Here, a holistic review shows that the failure of Mr. Davis and Dr. Jones to engage with the entirety of the most relevant material makes their methodology unreliable. Davis Dep. Tr., [D.E. 357-3](#), at 267:19–25; *SAS Inst., Inc.*, 125 F. Supp. 3d at 590.

PLG also unsuccessfully attempts to distinguish Mr. Davis and Dr. Jones's failure to review the NRC Report and Navy letter from *Yates v. Ford Motor Co.*, 113 F. Supp. 3d 841 (E.D.N.C. 2015) and *E.E.O.C. v. Freeman*, 778 F.3d 463 (4th Cir. 2015). The United States' argument was not that errors in their report make Mr. Davis and Dr. Jones's opinions unreliable, but rather that their failure to consider relevant information makes their opinions unreliable.² See *Freeman*, 778 F.3d at 468–73 (Agee, J., concurring) (reasoning that an expert's practice of "cherry-picking" from relevant data rendered his opinion unreliable). Similarly, PLG's argument under *Yates*, that Mr. Davis and Dr. Jones's failure to review contrary scientific literature is excusable because the material was not peer-reviewed or published, ignores that the NRC Report was planned, overseen, and supported by the NRC's twenty-eight-member Board on Environmental Studies and Toxicology. Pls.' Opp'n, [D.E. 395](#), at 17; NRC Rep't, [D.E. 357-8](#), at 8. Accordingly, the Court should exclude Mr. Davis and Dr. Jones's opinions about the ATSDR's water modeling methods because PLG has not shown that these opinions meet Rule 702's reliability threshold. See Fed. R. Evid. 702.

² Although, as PLG concedes, the United States' expert did identify numerous errors in their work. Pls.' Opp'n, [D.E. 395](#), at 16.

II. If Mr. Davis and Dr. Jones Did, In Fact, Base Their Opinion on the Model's Ability to Accurately Simulate Contaminant Concentrations at the Water Treatment Plant on Their Post-Audit, This Opinion is Both Unsupported by the Data and Based on an Unreliable Methodology.

If Mr. Davis and Dr. Jones's opinion that ATSDR's model accurately simulates historical contaminant concentrations at the water treatment plant is, as PLG claims, based on their post-audit, it is based on an unreliable analytical gap. *See Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) ("A Court may conclude that there is simply too great an analytical gap between the data and the opinion proffered."). Both Mr. Davis and Dr. Jones acknowledged that the post-audit confirmed ATSDR's model overpredicted contaminant concentrations at the water treatment plant. Jones Dep. Tr., [D.E. 357-6](#), 251:6–9; Davis Dep. Tr., [D.E. 357-3](#), 276:1–4. PLG has not explained how Mr. Davis and Dr. Jones had a reliable basis to opine that the ATSDR's model accurately simulates historical contaminant concentrations at the water treatment plant based on a post-audit showing that the model overpredicted these concentrations. PLG points to the fact that ATSDR's model overpredicted contaminant concentrations between 1995 and 2008 by an average of 48 µg/L, and claims, with no explanation, that this is a "well-balanced fit." Pls.' Opp'n, [D.E. 395](#), at 13 (citing Davis and Jones Rebuttal Rep't, [D.E. 357-5](#), at 3-5 (acknowledging the model is biased high, but concluding that the model is still "relatively well balanced overall" without explaining why)). This conclusory statement—which amounts to Mr. Davis and Dr. Jones's *ipse dixit*—cannot be tested or subject to peer review. PLG has therefore failed to show that such an opinion is reliable.³ *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,

³ The United States has not sought to exclude Mr. Davis and Dr. Jones's written opinions about the model's accuracy which focus broadly on its ability to capture plume characteristics, but instead seeks to exclude their opinions that the model can accurately simulate contaminant concentrations at the water treatment plant. *Compare* Davis & Jones Initial Rep't, [D.E. 357-4](#), at vi ("[T]he original Tarawa Terrace groundwater flow and transport models . . . continue to provide reliable insights into the migration of PCE contamination") *with* Jones Dep. Tr., [D.E. 357-6](#), at 231:18–232:13 ("[T]he opinions we've rendered on the model was that in terms of the -- how the model simulates concentrations at the water treatment plant,

509 U.S. 579, 599–95 (1993).

Moreover, and contrary to PLG’s argument, even though a post-audit may help build confidence in a model, it cannot serve as the basis for an expert’s opinion that a model is valid. [D.E. 395](#), at 12–13; *see also Sommerville*, 2024 WL 1204094, at *8–15 (excluding an air dispersion model for failure to validate it).

Indeed, PLG’s own experts undercut this argument. Dr. Leonard Konikow, PLG’s water modeling expert, testified at his deposition:

[I]f you use the model, the same model to predict another year into the future, that may be very wrong. That prediction may be wrong and, therefore, that would prove you had an invalid model. It would invalidate the model. So when you use a postaudit to assess the accuracy of the prediction, if it turns out -- which doesn't always happen -- if it turns out that the prediction was fairly reliable and acceptably accurate, it helps build confidence in the model. You’re building confidence in the model. You feel better about the model. You just have not proved that it is a valid model. You have not validated the model because the next prediction could be very much in error with the same model, and that would invalidate the model.

Konikow Dep. Tr., [D.E. 369-8](#), at 264:7–25. As Dr. Konikow testified, notwithstanding the confidence that may have been built in a model based on a post-audit, new data could undermine that confidence, which is why a post-audit cannot validate a model. *Id.* According to Dr. Konikow, even if Mr. Davis and Dr. Jones’s post-audit built confidence in ATSDR’s model predictions on contaminant concentrations at Tarawa Terrace after 1995, this does not mean the model is valid. *See id.* In fact, because there will never be new historical contaminant concentration data for the period from 1953 to 1987 beyond what currently exists, there is no way to conclusively show that the model is accurate during that historic time period.⁴

it -- it is a reasonably accurate model developed using sound scientific and engineering principles”). The United States disagrees with Mr. Davis and Dr. Jones’ written opinions about the ATSDR model’s accuracy but recognizes that they are based on the post-audit and therefore can be appropriately challenged through cross examination.

⁴ Moreover, the fact that the post-audit overpredicted contaminant concentrations at the water treatment plant is consistent with ATSDR’s own analysis in the Chapter F Report that the Tarawa Terrace model

In support of their argument that the use of post-audits as a means of assessing model accuracy has been subject to peer review, PLG cites a post-audit performed by Dr. Konikow but conspicuously omits a later editorial reflecting on that study. Dr. Konikow wrote:

Several postaudits have been performed to evaluate the accuracy of predictions made using supposedly “validated” models. Compared to the number of model studies, the number of postaudits is small. There are numerous problems in examining past predictions; often the stress placed on the system was quite different from that used in the model analysis.

The results of the current set of postaudits suggest that extrapolations into the future were rarely very accurate. There are various problems with the models: the period of history match was too short to capture an important element of the model, or the conceptual model was incomplete, or the parameters were not well-defined, etc. Our experience suggests that the models are more useful as tools used by the hydrologist to understand the system rather than as tools to predict future response. Our record of “validating” models is not encouraging.

Exhibit 1, J.D. Bredehoeft and L.F. Konikow, *Ground-Water Models: Validate or Invalidate*, 50 Ground Water 493, 494 (2012). Indeed, the very same textbook that PLG cites to argue that post-audits are “an optional step” in developing contaminant fate and transport models states the following about post-audits:

[E]ven though it is likely that there have been tens of thousands of forecasts by groundwater models since the 1960s, few postaudits are reported in the literature.

...

Early postaudits (Konikow, 1995) showed that model forecasts fail owing to modeler error, improper conceptual models, and failure to estimate future stresses accurately.

...

Although postaudits may help optimize the performance of an existing pump-and-treat system, for example, and are integrated into the concept of adaptive management, ultimately they cannot overcome uncertainty intrinsic to forecasts made in a world dominated by “unknown unknowns.”

Mary P. Anderson et al., *Applied Groundwater Modeling: Simulation of Advective Flow and*

“moderately to substantially overpredicted observed concentrations” TT Ch. F., [D.E. 395-13](#), at F33, F42. PLG fails to address how the post-audit demonstrates that the model’s simulated concentrations are sufficiently accurate and reliable for making individual exposure determinations in light of this limitation. See Davis Dep. Tr., [D.E. 357-3](#), at 287:19–288:2; Jones Dep. Tr., [D.E. 357-6](#), at 230:10–20; United States’ Mot., D.E. 367; United States’ Supp. Mem., D.E. 368.

Transport 481–82 (2d ed. 2015). Given that the use of a post-audit to evaluate the validity of a model is not even accepted by all of PLG’s own experts, it cannot be said to be generally accepted in the scientific community, so opinions on validity based on a post-audit are not reliable under *Daubert*. See *Nease v. Ford Motor Co.*, 848 F.3d 219, 229 (4th Cir. 2017) (“[A] known technique which has been able to attract only minimal support with the community may properly be viewed with skepticism.”) (internal quotation omitted). Therefore, to the extent Mr. Davis and Dr. Jones’s opinions on the accuracy of ATSDR’s model were based on the post-audit, those opinions do not meet the reliability requirement of Federal Rule of Evidence 702.

CONCLUSION

For the foregoing reasons, the United States requests that the Court grant the United States’ Motion to Exclude the Opinion Testimony of Mr. R. Jeffrey Davis and Dr. Norman L. Jones.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on July 3, 2025, I electronically filed the foregoing using the Court's Case Management/Electronic Case Files system, which will send notice to all counsel of record.

/s/ Giovanni Antonucci
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